

Indicators of biodiversity in agroecosystems: insights from Article 17 of the Habitat Directive and IUCN Red List of Threatened Species

Original

Indicators of biodiversity in agroecosystems: insights from Article 17 of the Habitat Directive and IUCN Red List of Threatened Species / Masante, Dario; Rega, Carlo; Cottam, Andrew; Dubois, Gregoire; Paracchini, Maria Luisa. - STAMPA. - (2015), pp. 1-112. [10.2788/30297]

Availability:

This version is available at: 11583/2658265 since: 2016-11-30T11:20:44Z

Publisher:

Publication Office of the European Union

Published

DOI:10.2788/30297

Terms of use:

openAccess

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

(Article begins on next page)

JRC TECHNICAL REPORTS

Indicators of biodiversity in agroecosystems: insights from Article 17 of the Habitats Directive and IUCN Red List of Threatened Species

Dario Masante, Carlo Rega, Andrew Cottam,
Grégoire Dubois, Maria Luisa Paracchini

2015



Indicators of biodiversity in agroecosystems: insights from Article 17 of the Habitats Directive and IUCN Red List of Threatened Species

This publication is a Technical report by the Joint Research Centre, the European Commission's in-house science service. It aims to provide evidence-based scientific support to the European policy-making process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this publication.

Contact information

Maria Luisa Paracchini

Address: Joint Research Centre, Via E. Fermi 2749, TP 266, I-21027 Ispra (VA), Italy

E-mail: luisa.paracchini@jrc.ec.europa.eu

Tel.: +39 0332 78 9897

JRC Science Hub

<https://ec.europa.eu/jrc>

JRC97800

EUR 27536 EN

ISBN 978-92-79-52972-6 (PDF)

ISBN 978-92-79-52973-3 (print)

ISSN 1831-9424 (online)

ISSN 1018-5593 (print)

doi:10.2788/255057 (online)

doi:10.2788/30297 (print)

© European Union, 2015

Reproduction is authorised provided the source is acknowledged.

All images © European Union 2015, except: Cover Photo © Grégoire Dubois, 2015

Table of contents

Abstract	1
1. Introduction	3
2. Analysis based on Article 17 habitats assessment	7
2.1 Data from Art.17 reporting on habitats and species: characteristics and limitations	7
2.2 Overview of terrestrial status and agricultural-related habitats' conservation status	10
2.3 Difference in conservation status between agriculture-related habitats and others habitats.....	17
2.4 Relations between conservation status, pressures and threats in agriculture-related habitats	21
3. Analyses based on IUCN data on species	31
3.1 Overview of IUCN data, characteristics and limitations.....	31
3.2 Occupancy analysis	34
3.4 Species Richness.....	43
4. Integrating Art. 17 and IUCN data	47
4.1 Habitat Conservation Status and species richness	47
4.2 Habitat Conservation Status and Red List Index	49
5. Conclusions and ways forward	51
References	53
ANNEX 1	I
ANNEX 2	XIII
A2.3 Isolation	XXII
A2.4 Towards a generalised empirical model of species richness in Europe.....	XXIX
A2.4 Discussion of model results	XXXVIII
A2.5 Geographical Trends of the Red List Index.....	XLI
References – ANNEX 2	XLIII
List of abbreviations and definitions.....	XLV
List of figures.....	XLVI
List of tables.....	XLIX

Abstract

In the current decade, the main goals for biodiversity conservation and environmental protection at the level of the European Union are set in the EU Biodiversity Strategy to 2020: halting biodiversity loss and restoring ecosystem services. A key requirement for the implementation of the Strategy in terms of targeting measures and funds, and monitoring trends is the construction of a biodiversity knowledge base, including spatially explicit information on biodiversity distribution and ecosystem condition. The work presented in this report is based on the analysis of two primary datasets on biodiversity and habitat status. The first one is the Habitats assessment carried out by EU Member States under Art.17 of the Habitats and Birds Directive. Information reported by Member States is analysed to derive the links between pressures and conservation status, showing that agriculture-related habitats have, on average, a worse conservation status when compared to other habitats. Consequently, threats and pressures having most influenced the status of the agricultural-related habitats can be identified. The second one is the global dataset on species threat status elaborated by The International Union for Conservation of Nature (IUCN). Spatially explicit representations of species distribution, status and richness across the EU 28 are provided, and most importantly the identification of wide geographic variables linked to ecological theory is presented, that explain to a large extent the continental trend in species richness. Finally, an example is presented of how the two exploited datasets can be jointly used by cross-tabulating data on habitats assessments and species threat status in a spatially explicit way at 10 km resolution, aiming at identifying hotspots where policy intervention is needed.